

Ladder Ball

Name: _____

Date: _____

Description:

We are going to make Ladder Ball games. The construction of this project will focus on skills and techniques that are used in irrigation assembly. You will be working with PVC pipe, fittings, glue, and cutting tools. Measuring, cutting, gluing, painting, and fitting will be covered in this project. A high level of detail and focus will be required to be successful at creating good looking and functional products.

Materials:

- 35' of 1/2" Sch. 40 PVC
- (8) 1/2" elbows
- (12) 1/2" Tees
- (4) 1/2" caps
- blue, red, black, yellow spray paint
- PVC glue (clear)
- (6) solid core golf balls
- 10' of heavy string or twine

Tools:

- tape measure
- pencil
- pipe cutter
- hacksaw
- fine grit sandpaper
- electric drill or drill press
- vise

Directions:

Before you Start!

Put on your safety glasses

Read all directions and study the plans

Work in teams of two. Each student will be in charge of making one ladder ball stand. The team will create the pair.

1. Gather it

Each team will need...

- 35' of 1/2" Schedule 40 PVC pipe get
- (8) 1/2" elbows
- (12) 1/2" tees
- (4) 1/2" end caps

2. MEASURE IT

Cut your PCV pipe to the proper dimensions. Each person will need to cut pieces for one complete ladder ball stand. Therefore, each person needs to cut..

- (8) 18" pieces

–(6) 12" pieces

You may use any of the methods shown to cut the pipe. Just make sure your cuts are accurate and consistent. The stands will not be square if the cuts are not made properly.

3. PAINT IT

All the parts will be painted on this project. Remember, design is in the details. No one wants to purchase something made with marks all over it. Thin coats of paint!!! At least three of them for proper coverage.

- Paint all connectors on the base black
- Paint two elbows blue
- Paint two tees yellow
- Paint two tees red

That will be the way in which the pieces are glued together. Top is blue, middle is yellow, and bottom is red.

4. SAND IT

Paint on plastic won't hold up very well if it is constantly getting hit by flying objects. Therefore, we are going to sand off the ink on the pipe.

Using fine grit sandpaper, wrap around pipe clasping in hand and sand until each piece is uniform and solid white in color.

5. ASSEMBLY

The ladder ball stand will be assembled in two parts as drawn in the diagram. The upright and the base will be completely glued separate units. **Don't glue the upright into the base!** This is for storage purposes. Attempt not to have excess glue running down pipe. Wipe off any excess glue with a damp towel.

Glue all connection on the upright together until unit is finished as shown in the diagram.

Note: Be sure to glue while lying pieces on a flat surface so all connections line up accurately.

Glue the sides of the upright first then add in the cross bars.

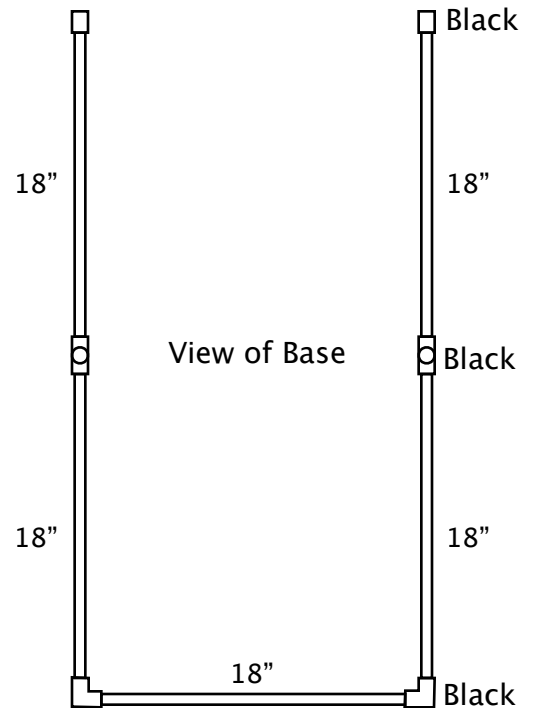
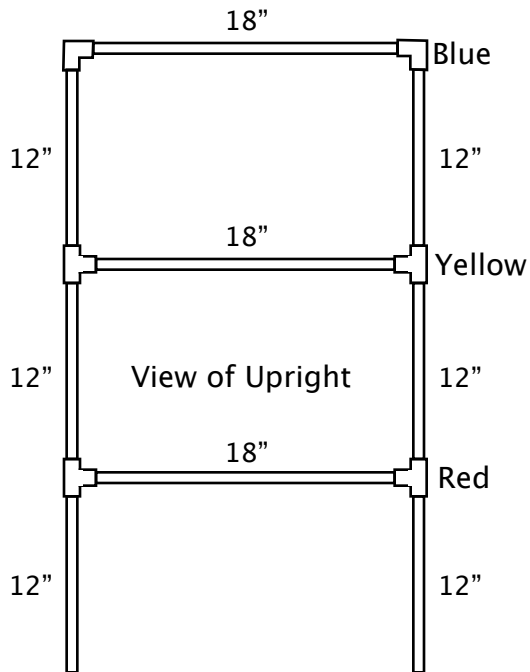
Glue base together as shown in the diagram.

Each Tee in the base will need to sit perpendicular to the elbows when assembled. This will ensure that the upright will stand vertically when assembled.

6. MAKE THE BOLOS

Now you need to make the bolos that will be used to play the game.

- Drill a 1/4" hole in each of the two golf balls using a drill press or electric drill.
- Run a piece of heavy twine through each of the golf ball and tie a knot at each end of the twine to make a stopper.
- Slide the golf balls to each end, tie another knot to trap the golf ball on the end, and you are finished.

Drawings/Photos:**Notes:**

The top will fit into the base when assembled. Simply slide the 1/2" tubing into at the bottom of the upright into the slip-slip-slip (SxSxS) tee in the middle of the base. This will be the only connection that is not glued together.

Before gluing any connections, make sure to spray paint the pieces the desired colors. Gluing will probably take place next class period. It will be hard to do a nice paint job once glued.

Notes:

Ladder Ball Student Worksheet:

Name: _____

Date: _____

Complete this worksheet prior to starting the project.

1. What size and thickness of PVC is used for this project?

2. Draw a sketch of the project and label the dimensions.

3. What type of glue is used on the project? _____ What other types of glue are there? _____ and _____

4. What glue dries the fastest? _____

5. What glues dries slow, but is the strongest? _____

6. What tools are required to complete this project?

6. DEFINE THE FOLLOWING:

PVC--

PSI--

Elbow--

Grading Rubric:

Criteria (+/- 1/2")	Possible	Score
Height and width	10	
Squareness and vertical stance	10	
General Workmanship (Clean use of glue, clean use of paint, and)	20	
Bolos	10	
Worksheet completion	25	
TOTAL	75	

